

Listing of Claims

1. (currently amended) An inking and cleaning system for use on a printing press, the system comprising:

a fluid circuit having a first operating configuration wherein the fluid circuit is adapted to supply an ink to the printing press, ~~and a second operating configuration wherein the fluid circuit is adapted to supply a cleaning solution to the printing press, the fluid circuit having a first pump operatively coupled to a source of the ink to circulate the ink through the fluid circuit, the fluid circuit including a second pump operatively coupled to a source of the cleaning solution to circulate the cleaning solution through the fluid circuit, and one or more valves arranged to switch the fluid circuit between the first operating configuration and the second operating configuration;~~

~~the supply of the cleaning solution~~ the fluid circuit arranged to supply a selected one of a clean rinse or a used flush through the fluid circuit when the fluid circuit is in the second operating configuration;

the fluid circuit further arranged to draw an amount of clean rinse through the fluid circuit and return a resulting volume of used clean rinse into a used flush tank if a desired amount of the used flush is deficient;

and

a controller operatively coupled to the fluid circuit and adapted to cause the fluid circuit to switch between the first operating configuration and the second operating configuration, the controller further arranged to supply first the used flush and second the clean rinse through the fluid circuit and calculate whether a volume of the used flush tank is available to accept the resulting volume of used clean rinse when the fluid circuit is in the second operating configuration.

2. (currently amended) The system of claim 1, wherein the first operating configuration is adapted to supply the ink from an ink source and return any unused ink to the ink source[[],]; and

wherein the second operating configuration is adapted to return the used flush solution to ~~a fluid retainer~~ the used flush tank after use.

3. (currently amended) The system of claim 1, wherein the one or more valves are arranged in a first valve configuration placing the fluid circuit in flow communication with an ink source; and

wherein the one or more valves are arranged in a second valve configuration placing the fluid circuit in flow communication with a cleaning solution ~~source~~tank and ~~a used flush solution retainer~~ the used flush tank.

4. (currently amended) The system of claim 1, further comprising including a clean solution ~~source; and a used solution source, and~~ tank;

wherein the fluid circuit is adapted to return the solution from at least one of the clean solution tank and ~~used solution sources~~ the used flush tank to the ~~used solution source~~ used flush tank.

5. (currently amended) The system of claim 4, wherein at least one of the clean solution ~~source~~ tank and the used ~~solution source~~ flush tank further comprises a level transmitter adapted to determine a volume of solution in the clean solution source tank or the used flush tank.

6. (currently amended) The system of claim 1, further comprising a solution fluid circuit, a solution pump, a solution source, a solution discharge, and at least one solution valve, the solution valve being arranged to place the solution fluid circuit in flow communication with at least one of the clean solution ~~source~~ tank and the used ~~solution~~ flush tank ~~source~~.

7. (previously presented) The system of claim 1, wherein the fluid circuit further comprises a surge suppressing filter disposed between the first pump and the printing press.

8. (original) The system of claim 1, wherein the fluid circuit further comprises at least one flow sensor.

9. (currently amended) The system of claim 1, wherein the fluid circuit is adapted to supply a used ~~solution~~ flush to the printing press for flushing, and wherein the fluid circuit is further adapted to supply a clean ~~solution~~ rinse to the printing press for rinsing.

10. (canceled)

11. (canceled)

12. (original) The system of claim 1, wherein the system further comprises a display operatively coupled to the controller, the display being adapted to display information to a user.

13. (original) The system of claim 1, wherein the system further comprises a light tower coupled to the controller, the light tower being adapted to display information to a user.

14. (currently amended) The system of claim 1, wherein the fluid circuit is adapted to supply the ink from an ink source to the printing press for use, ~~and return any unused ink to the ink source, and wherein the fluid circuit is adapted to supply the~~ clean rinse solution from a clean rinse tank solution source to the printing press for flushing the printing press, and return the clean rinse solution to a used flush tank ~~the solution source~~ after use.

15. (currently amended) An inking and flushing system for use on a chamber doctor blade system, the system comprising:

a fluid circuit having a first operating configuration wherein the fluid circuit is adapted to supply an ink to the printing press via an ink supply pump and a second operating configuration wherein the fluid circuit is adapted to supply a solution to the printing press via a flush pump, the fluid circuit arranged to circulate ~~fluid at least one of the ink or the solution~~ through the fluid circuit and including one or more valves to switch the fluid circuit between the first operating configuration and the second operating configuration;

an ink station operatively coupled to the ink supply pump and adapted to provide ink to the fluid circuit;

a flush station operatively coupled to the flush pump and adapted provide the solution to the fluid circuit, the solution including a selected one of a used flush and a clean rinse; and

a controller operatively coupled to the fluid circuit and adapted to cause the fluid circuit to switch between the first operating configuration and the second operating configuration, ~~the controller further arranged to select a desired one of the used flush or the clean rinse when in the second operating configuration, the controller and the fluid circuit further arranged to provide first the used flush and then the clean rinse when in the second operating configuration~~[[;]], if a desired amount of the used flush is deficient, draw an amount of clean rinse through the fluid circuit, the amount being sufficient to clean the fluid circuit, calculate an unfilled volume of a used flush tank, displace a volume of used flush from the used flush tank when the unfilled volume of the used flush tank is less than the amount of clean rinse drawn through the fluid circuit, and deposit the amount of clean rinse drawn through the fluid circuit into the used flush tank;

~~and~~ wherein the ink supply pump and the flush pump are double diaphragm pumps arranged to supply and return substantially the same volume of fluid.

16. (original) The system of claim 15, wherein the ink station is adapted to supply the ink from the ink station to the fluid circuit for use in the chamber doctor blade system and wherein the ink station is further adapted to return any unused ink to the ink station.

17. (currently amended) The system of claim 15, wherein the flush station further comprises a clean ~~solution source~~ rinse tank and a ~~used solution source~~, wherein the flush station is adapted to supply the solution from at least one of the clean ~~solution source~~ rinse tank and the used ~~solution source~~ flush tank to the fluid circuit for use in flushing the chamber doctor blade system, and ~~wherein the flush station is further adapted to return the solution to the used solution source~~ flush tank.

18. (previously presented) The system of claim 15, wherein the ink supply pump and the flush pump are double diaphragm air driven pumps.

19. (currently amended) The system of claim 15, wherein the flush station further comprises:

a solution fluid circuit[[,]]adapted to supply solution to the flush station and being adapted to remove solution from the flush station;

a solution pump[[,]]; and

a solution source[[,]]; and

a solution discharge tank[[,]]. ~~the solution fluid circuit being adapted to supply solution to the flush station and being adapted to remove solution from the flush station.~~

20. (canceled)

21. (canceled)

22. (canceled)

23. (canceled)

24. (currently amended) A method of inking and flushing a printing press, the method comprising ~~the steps of:~~

supplying an ink to an operating printing press through a fluid circuit, the fluid circuit comprising a plurality of fluid lines, a flush pump, ~~separate from~~ an ink pump, and a plurality of valves;

removing ink from the fluid circuit;

supplying a first solution to the operating printing press through the fluid circuit, the first solution comprising first a used solution and then a clean rinse;

flushing the operating printing press and the fluid circuit with the first solution;

removing the first solution from the fluid circuit to a used solution ~~storage area~~ tank;

supplying an amount of a second solution to the operating printing press through the fluid circuit, the second solution comprising a clean ~~solution~~ rinse;

flushing the operating printing press and the fluid circuit with the amount of the second solution; ~~and~~

calculating whether the amount of the second solution is greater than or less than an empty volume of the used solution tank;

removing the second solution from the fluid circuit to the used solution ~~storage area~~ tank if the amount of the second solution is less than the empty volume of the used solution tank;

displacing an amount of the first solution from the used solution tank and removing the second solution from the fluid circuit to the used solution tank if the amount of the second solution is greater than the empty volume of the used solution tank.

25. (currently amended) The method of claim 24, further comprising ~~the step of~~ priming the fluid circuit with at least one of the ink, the first solution, and the second solution.

26. (currently amended) The method of claim 24, further comprising ~~the step of~~ circulating the first solution within the fluid circuit for a period of time.

27. (currently amended) The method of claim 24, further comprising ~~the step of~~ circulating the second solution within the fluid circuit for a period of time.

28. (currently amended) The method of claim 24, further comprising ~~the step of~~ accepting operating parameters from an operator.

29. (currently amended) The method of claim 24, further comprising including the ~~step of~~ removing used solution from the used solution ~~storage area tank~~.

30. (currently amended) The method of claim 29, further comprising including the ~~step of~~ monitoring the volume of used solution in the used solution ~~storage area tank~~.

31. (new) The method of claim 24, wherein the amount of used solution from the used solution tank is equal to the amount of the second solution.

32. (new) The method of claim 24, further comprising:
determining at least one of an amount of time and a volume of clean rinse to effectively clean a selected portion of the fluid circuit;
circulating the volume of clean rinse through the selected portion of the fluid circuit for the determined amount of time, the selected portion of the fluid circuit including an ink circuit.

33. (new) The method of claim 24, further comprising determining an inking recipe, the inking recipe including at least one of an ink supply speed, a minimum ink pump speed, a maximum ink pump speed, a constant ink pump speed, and an ink return speed;
wherein the ink supply speed corresponds to a fluid circuit manual configuration; and

wherein at least one of the minimum ink supply speed and the maximum ink pump speed corresponds to a fluid circuit automatic configuration.

34. (new) The method of claim 24, further comprising determining a flush recipe, the flush recipe including at least one of a duration of a flush process, a duration of a rinse recirculation, and a speed of a flush discharge; and
determining the speed of the flush discharge according to a discharge collection method.

35. (new) The system of claim 1, wherein the controller is further adapted to displace a volume of used flush from the used flush tank when the resulting volume of used clean rinse is greater than the volume of the used flush tank.

36. (new) The system of claim 1, further comprising a plurality of headers, the headers configured to supply at least one of the used flush or the clean rinse to the fluid circuit, and to return of at least one of the used flush or the clean rinse to the used flush tank.

37. (new) The system of claim 1, further comprising a plurality of sensors, at least one of the plurality of sensors configured to:

- indicate a used flush level of the used flush tank;
- indicate an ink level of an ink tank;
- indicate a clean rinse level of a clean rinse tank; or
- indicate at least one of a flow or a no-flow condition in the fluid circuit.